Claims

1. A method for isolating normal hepatocytes, the method comprising the steps of:
   (a) recovering liver tissue from a patient during a hepatectomy; and
   (b) isolating normal hepatocytes from unwanted cells present in the recovered tissue by magnetic separation.

2. The method of claim 1 wherein the hepatectomy is performed to resect a liver, or a portion thereof, containing a benign or malignant tumour.

3. The method of claim 2 further comprising the step of removing macroscopic evidence of the tumour-affected tissue from the recovered liver tissue prior to the step of isolating the hepatocytes by magnetic separation.

4. The method of any one of claims 1 to 3 wherein the unwanted cells are tumour cells.

5. The method of any one of claims 1 to 4 wherein the magnetic separation of cells is achieved using superparamagnetic colloids coated with an antibody.

6. The method of claim 5 wherein the antibody is a monoclonal antibody which specifically recognises an epitope on the surface of the normal hepatocytes.

7. The method of claim 5 wherein the antibody is a monoclonal antibody which specifically recognises the unwanted cells.

8. A method of preparing hepatocytes for transplantation, the method comprising the steps of:
   (c) recovering liver tissue from a patient during a hepatectomy; and
   (d) isolating normal hepatocytes from unwanted cells present in the recovered tissue by magnetic separation.

9. The method of claim 8 wherein the hepatectomy is performed to resect a liver, or a portion thereof, containing a benign or malignant tumour.

10. The method of claim 9 further comprising the step of removing macroscopic evidence of the tumour-affected tissue from the recovered liver tissue prior to the step of isolating the hepatocytes by magnetic separation.

11. The method of any one of claims 8 to 10 wherein the unwanted cells are tumour cells.

12. The method of any one of claims 8 to 11 wherein the magnetic separation of cells is achieved using superparamagnetic colloids coated with an antibody.

13. The method of claim 12 wherein the antibody is a monoclonal antibody which specifically recognises an epitope on the surface of the normal hepatocytes.

14. The method of claim 12 wherein the antibody is a monoclonal antibody which specifically recognises the unwanted cells.

15. Normal hepatocytes isolated according to the method of any one of claims 1 to 7.

16. Normal hepatocytes prepared according to the method of any one of claims 8 to 14.

17. The use of normal hepatocytes isolated according to the method of any one of claims 1 to 7 or prepared according to the method of any one of claims 8 to 14 for hepatocyte transplantation in a patient suffering from a liver disorder.

18. The use of claim 17 wherein the liver disorder is selected from the group consisting of: Crigler-Najar Syndrome; Gilbert's Syndrome; Dubin Johnson Syndrome; familial hypercholesterolemia; ornithine transcarbamoylase deficiency; hereditary emphysema; haemophilia; viral hepatitis; hepatocellular carcinoma; acute liver failure; and chronic liver failure.

19. A method for treating a liver disorder in a patient, the method comprising administering to the patient normal hepatocytes isolated according to the method of any one of claims 1 to 7 or prepared according to the method of any one of claims 8 to 14 in an amount and for a time sufficient to treat the liver disorder.

20. The method of claim 19 wherein the liver disorder is selected from the group consisting of: Crigler-Najar Syndrome; Gilbert's Syndrome; Dubin Johnson Syndrome; familial hypercholesterolemia; ornithine transcarbamoylase deficiency; hereditary emphysema; haemophilia; viral hepatitis; hepatocellular carcinoma; acute liver failure; and chronic liver failure.

21. The use of normal hepatocytes isolated according to the method of any one of claims 1 to 7 in an artificial liver support system.

22. The use of resected liver tissue recovered during a hepatectomy for the isolation of normal hepatocytes, wherein the normal hepatocytes are isolated from unwanted cells in the resected tissue by magnetic separation.

23. The use of resected liver tissue recovered during a hepatectomy for the preparation of hepatocytes for transplantation wherein normal hepatocytes are isolated from unwanted cells in the resected tissue by magnetic separation.